

CONTROL STRATEGY FOR FLEXIBLE CATALYTIC COMBUSTION SYSTEM

ABSTRACT OF THE DISCLOSURE

A method of controlling a catalytic combustion system comprising a flame burner or a heat exchanger, a fuel injector positioned downstream of the flame burner or heat exchanger and a catalyst positioned downstream of the fuel injector, wherein a portion of the fuel combusts within the catalyst and the remainder of the fuel combusts in the region downstream of the catalyst comprising: measuring the exhaust gas temperature; and adjusting the catalyst inlet gas temperature to a preferred value based upon a predetermined schedule that relates the catalyst inlet gas temperature to the difference between the measured exhaust gas temperature and the calculated exhaust gas temperature at full load.

A method of controlling a catalytic combustion system comprising a flame burner or a heat exchanger, a fuel injector positioned downstream of the flame burner or heat exchanger and a catalyst positioned downstream of the fuel injector, wherein a portion of the fuel combusts within the catalyst and the remainder of the fuel combusts in the region downstream of the catalyst in a homogeneous combustion process wave comprising: positioning a sensor to monitor the region downstream of the catalyst, the sensor having an output signal responsive to the location of the homogeneous combustion process wave; and using the sensor signal to adjust the catalyst inlet gas temperature to control the position of the homogeneous combustion process wave.

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